

Expression of Interest for a large scale [one ton] Germanium experiment

**Reserving
a space
at CJPL**



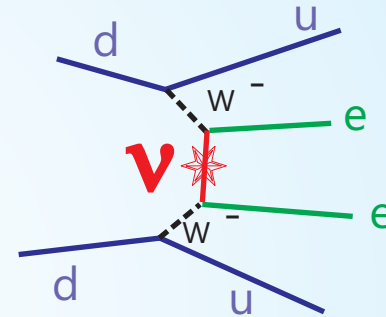
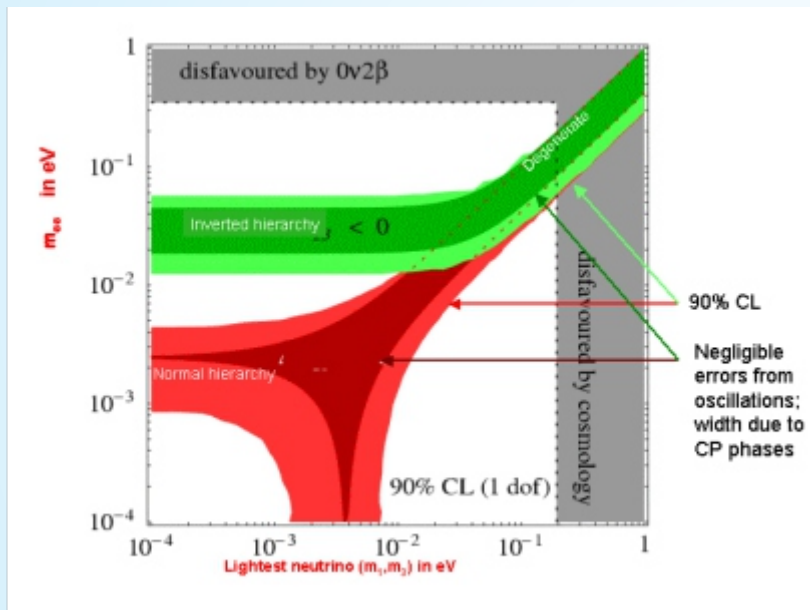
Max-Planck-Institut für Physik
(Werner-Heisenberg-Institut)



I.Abt, MPI für Physik

Physics Case

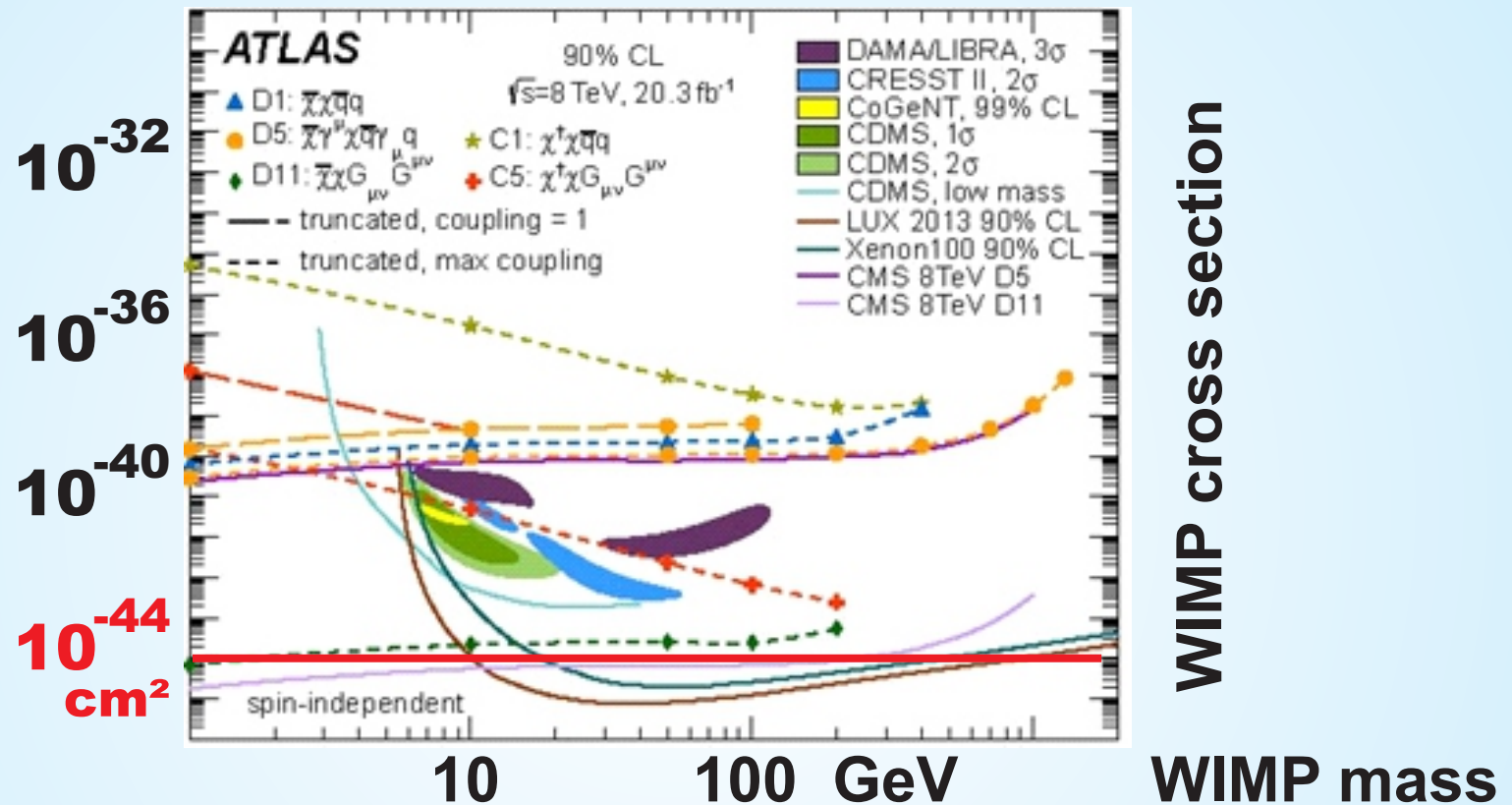
Neutrinoless Double Beta Decay



**old goal is 10 meV
related to inverted
hierarchy**

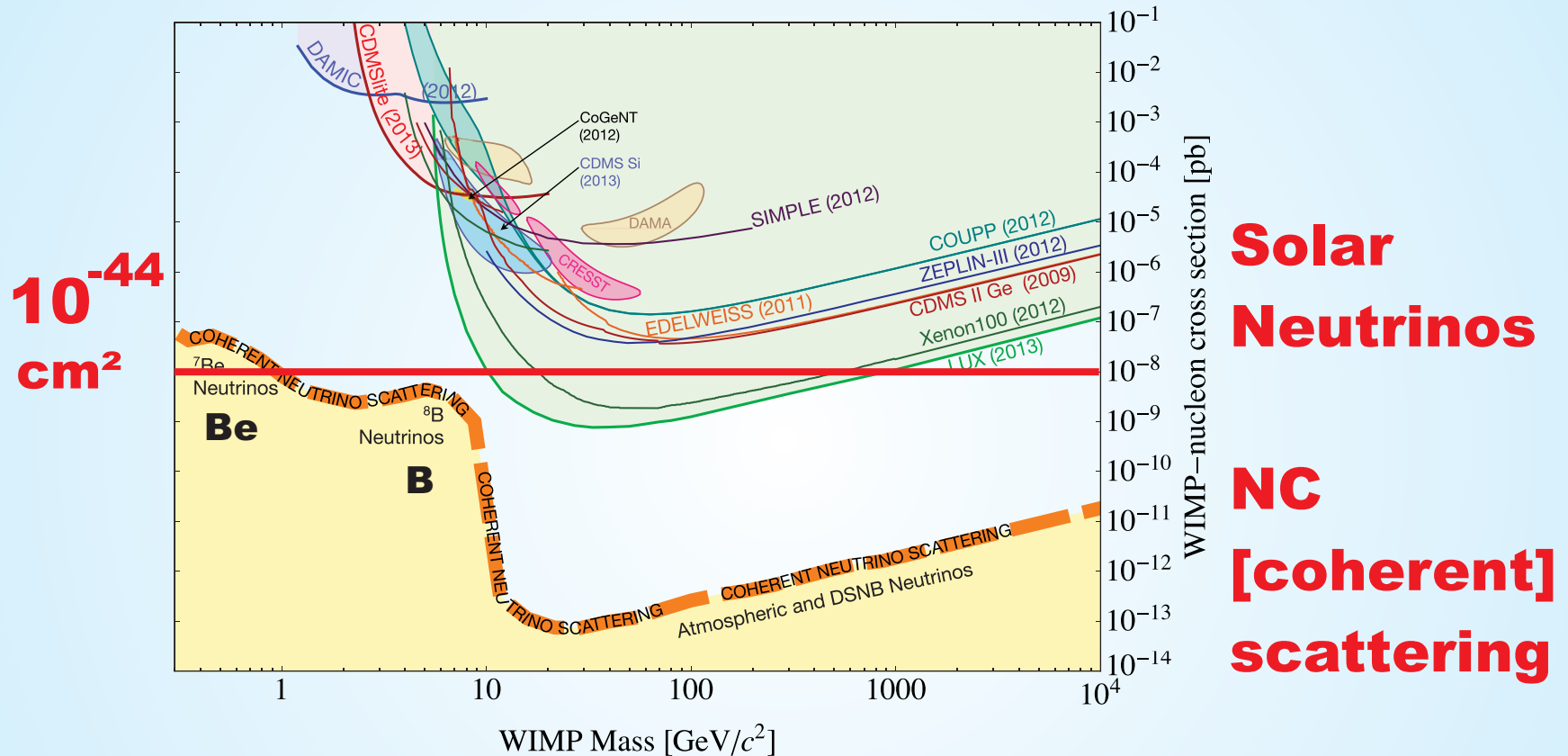
Look as far as you can....

Physics Case



Look for low mass dark matter, if it is a byproduct or if LHC finds something which should be surrounding us.

Physics Case

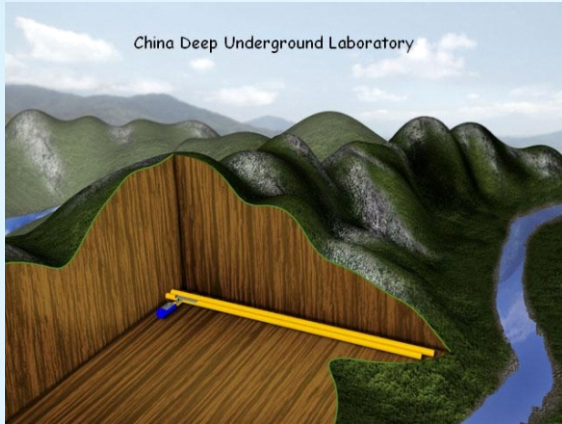


This requires more than a ton!

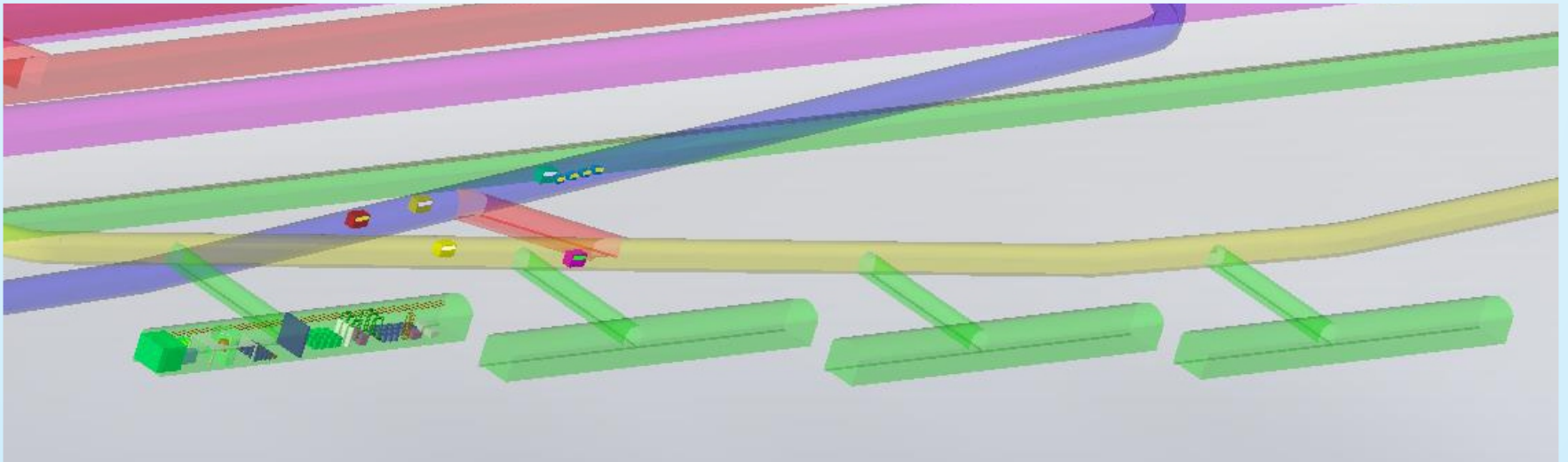
Axions?

Location

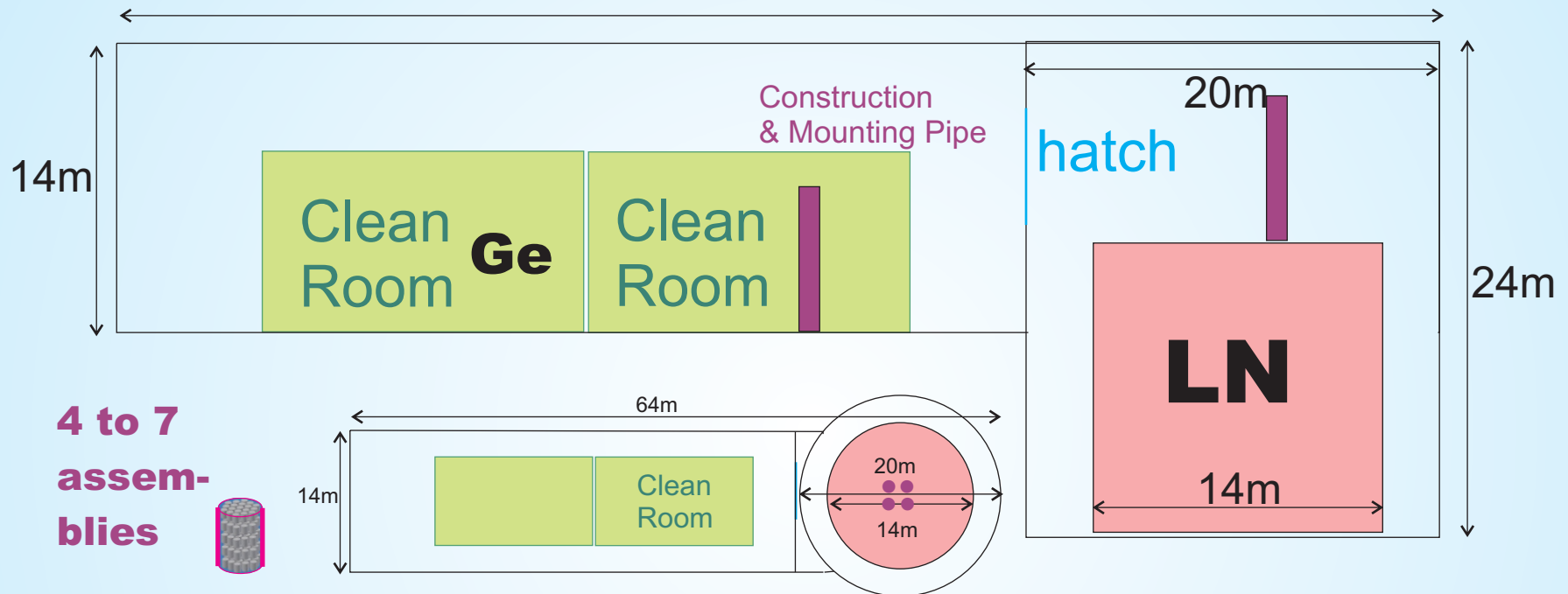
**really
deep
horizontal access**



CJPL would be a good place for a large scale experiment which needs a lot of space for itself and its support.



Concept



**Insert modular assemblies into
a large LN tank —or LAr or many other things.
That is what R&D is for [5 years foreseen].**

R&D

Detectors — reduce and identify background
— reduce threshold

→ **see low E reactor neutrinos**

Electronics — ASICs
— integrate on germanium

Cables — improve radiopurity and bandwidth

Holders — improve radiopurity

Shells — improve radiopurity with low Z

→ **build some PEN structures**

System integration and production

**A lot has to happen before a proposal, TDR
become possible.**

What Next

Who will sign the EoI:

I.Abt

A.Caldwell

X.Liu

B.Majorovits

O.Schulz

Dongming Mei



Max-Planck-Institut für Physik
(Werner-Heisenberg-Institut)

Keyun Kang
Qian Yue



Henry Wong



+ **?**

We need a structured effort for R&D !

Are we willing to form a proto-collaboration for this?